

REMARKS

Applicants would like to thank the Examiner for the careful consideration given the present application. Also, Applicants would like to thank the Examiner for the indication of allowable subject matter. The application has been carefully reviewed in light of the Office action, and amended as necessary to more clearly and particularly describe the subject matter which applicant regards as the invention. No new matter has been added.

In the present amendment, claims 1-4 have been cancelled. Claims 5-9 remain in the application. Of these claims, claims 5-6 have been indicated as containing allowable subject matter, and will not be discussed further hereinafter.

THE INVENTION

The present invention is generally directed to a rotational, position detecting sensor-equipped motor, capable of reducing a dimension thereof in an axial direction thereof. The motor includes a motor section including a motor stator and a motor rotor, a revolving shaft to which the motor rotor is coupled, a bearing structure for rotatably supporting the revolving shaft, and a rotational position detecting sensor for detecting a rotational position of the revolving shaft. The bearing structure, revolving shaft, motor section and rotational position detecting sensor are arranged so as to be concentric with each other in a radial direction of the revolving shaft.

The present biaxial motor illustrated in Fig. 2 includes a combined structure of a "first revolving shaft 114," a "first revolving frame 115" and a "first output plate 160." Another combined structure is shown, including a "second revolving shaft

129," a "second rotation frame 137" and a "second output plate 162." As set forth in the present specification, the first and second output plates are rotated with their respective revolving shafts and arranged so as to extend outwardly in a radial direction from the revolving shafts. The present motor is constructed so as to permit a rotational output of each revolving shaft to be outputted through the respective output plates. The present design also allows a decrease in the number of parts for the biaxial motor, and reducing the dimension of the motor in the axial direction as compared with the prior art. This is very different from the prior art relied on at present by the Examiner.

THE REJECTIONS UNDER 35 U.S.C. §102

Claims 1-3 and 7-9 had been rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Hirohiko et al. (Japanese Patent No. 10-128692). As noted previously, claims 1-3 have been cancelled and, therefore, the rejection thereof is no longer at issue. For at least the reasons set forth below, the rejection of claims 7-9 based upon Hirohiko et al. is respectfully traversed.

The Examiner relies on figure #2 of Hirohiko et al. as the basis for the present rejection. It would indeed appear that Hirohiko et al. does in fact disclose a type of motor. However, it is not clear from the figure alone to what extent this patent can be relied upon to show the elements of the present invention. In any event, the Examiner lists at great length the elements of Hirohiko et al.'s figure #2 that are taken to read on the present claims.

Nevertheless, it is respectfully submitted that the disclosure of Hirohiko et al.

does not show the combined structures of first and second revolving shafts, revolving frames, and output plates, as are recited in the present independent claim 7. As is disclosed in the present specification, and as was pointed out above, the rotational output of each revolving shaft is outputted through these output plates. This design is very beneficial in that the number of parts is reduced, and the axial length of the motor may be made shorter. These features result in clear economic advantages since manufacturing costs can be reduced with the reduced parts count. Also, the shorter axial length is highly advantageous for applications where space limitations require a shorter motor.

In any case, it is clear that the Examiner's listing of elements allegedly shown by Hirohiko et al. does not include the combined structures of first and second revolving shafts, revolving frames, and output plates, as are recited in the present independent claim 7. It is therefore respectfully submitted that the Hirohiko et al. patent cannot be relied on to satisfy the requirements of anticipation as set forth in Section 102. It is further submitted that there is no suggestion or motivation of modifying this reference, alone or in combination with any other reference, so as to arrive at a biaxial motor in accordance with the present claims. Indeed, any such modification of Hirohiko et al. could only be performed by one guided by the present disclosure. Further, any such modification would actually destroy the function of this device, rendering the device inoperable. Therefore, reconsideration of these grounds of rejection is respectfully requested.

In light of the foregoing, it is respectfully submitted that the present application is in a condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in a condition for allowance, the Examiner is

invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 18-0160, our Order No. NIS-12830.

Respectfully submitted,

RANKIN, HILL, PORTER & CLARK LLP

By



David E. Spaw, Reg. No. 34732

4080 Erie Street
Willoughby, Ohio 44094
(216) 566-9700